

Practitioner's Docket No. MPI01-018P1RNM

U.S.S.N. 10/074,527

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An isolated nucleic acid molecule selected from the group consisting of:
 - a) ~~a nucleic acid molecule comprising a nucleotide sequence which is at least 95% identical to the nucleotide sequence of SEQ ID NO:1, or SEQ ID NO:3, wherein said nucleic acid molecule encodes a polypeptide having at least one activity selected from the group consisting of the ability to glycosylate a target molecule, the ability to bind to a simple sugar and the ability to attach to a membrane;~~
 - b) ~~a nucleic acid molecule which encodes a polypeptide comprising an amino acid sequence with at least 90% 95% identity to the amino acid sequence of SEQ ID NO:2, wherein said polypeptide has a glycosyltransferase activity at least one activity selected from the group consisting of the ability to glycosylate a target molecule, the ability to bind to a simple sugar and the ability to attach to a membrane;~~
 - [[c]]b) ~~a nucleic acid molecule which encodes a polypeptide consisting of a fragment of a polypeptide comprising the amino acid sequence of SEQ ID NO:2, wherein the fragment comprises at least 285 contiguous amino acids of SEQ ID NO: 2, wherein said at least 285 contiguous amino acids comprise the glycosyltransferase domain of 33945 (amino acids 139 to 322 of SEQ ID NO:2), and the fragment has a glycosyltransferase activity have at least one activity selected from the group consisting of the ability to glycosylate a target molecule, the ability to bind to a simple sugar and the ability to attach to a membrane; and~~
 - [[d]]c) ~~a nucleic acid molecule which encodes a naturally occurring allelic variant of a polypeptide comprising the amino acid sequence of SEQ ID NO:2, wherein the nucleic acid molecule hybridizes to a nucleic acid molecule comprising SEQ ID NO: 1, 3, or a complement thereof, under hybridization conditions of 0.5M sodium phosphate, 7% SDS at 65°C, followed by one or more washes at 0.2X SSC, 1% SDS at 65°C, wherein said nucleic acid molecule encodes a polypeptide having a glycosyltransferase activity at least one activity selected from the group consisting of the ability to glycosylate a target molecule, the ability to bind to a simple sugar and the ability to attach to a membrane; and~~

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e) ~~a nucleic acid molecule which encodes the glycosyltransferase domain of 33945 (amino acids 139 to 322 of SEQ ID NO:2), wherein the glycosyltransferase domain has the ability to glycosylate a target molecule.~~

2. (Currently Amended) ~~The~~ An isolated nucleic acid molecule of claim 1, which is selected from the group consisting of:

- a) a nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO: 1, SEQ ID NO:3; and
- b) a nucleic acid molecule which encodes a polypeptide comprising the amino acid sequence of SEQ ID NO:2.

3. (Original) The nucleic acid molecule of claim 1 further comprising vector nucleic acid sequences.

4. (Original) The nucleic acid molecule of claim 1 further comprising nucleic acid sequences encoding a heterologous polypeptide.

5. (Previously Presented) A recombinant host cell which contains the nucleic acid molecule of claim 1.

6. (Previously Presented) The recombinant host cell of claim 5 which is a mammalian recombinant host cell.

7. (Previously Presented) A non-human mammalian recombinant host cell containing the nucleic acid molecule of claim 1.

8. -11. (Canceled)

12. (Currently Amended) A method for producing a 33945 polypeptide selected from the group consisting of:

- a) a polypeptide comprising an amino acid sequence with at least 90% 95% identity to the amino acid sequence of SEQ ID NO:2, wherein said polypeptide has a glycosyltransferase

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~~activity at least one activity selected from the group consisting of the ability to glycosylate a target molecule, the ability to bind to a simple sugar and the ability to attach to a membrane;~~

b) ~~a polypeptide comprising consisting of a fragment of the amino acid sequence of SEQ ID NO:2, wherein the fragment comprises at least 285 contiguous amino acids of SEQ ID NO:2, wherein said at least 285 contiguous amino acids comprise the glycosyltransferase domain of 33945 (amino acids 139 to 322 of SEQ ID NO:2), and the fragment has a glycosyltransferase activity have at least one activity selected from the group consisting of the ability to glycosylate a target molecule, the ability to bind to a simple sugar and the ability to attach to a membrane; and~~

c) ~~a polypeptide comprising a naturally occurring allelic variant of a polypeptide comprising the amino acid sequence of SEQ ID NO:2, wherein the polypeptide is encoded by a nucleic acid molecule which hybridizes to a nucleic acid molecule comprising SEQ ID NO:1, SEQ ID NO:3, or a complement thereof under hybridization conditions of 0.5M sodium phosphate, 7% SDS at 65°C, followed by one or more washes at 0.2X SSC, 1% SDS at 65°C, wherein said polypeptide has a glycosyltransferase activity at least one activity selected from the group consisting of the ability to glycosylate a target molecule, the ability to bind to a simple sugar and the ability to attach to a membrane; and~~

~~d) a polypeptide comprising the glycosyltransferase domain of 33945 (amino acids 139 to 322 of SEQ ID NO:2), wherein the glycosyltransferase domain has the ability to glycosylate a target molecule;~~

~~comprising culturing the host cell of claim 5 under conditions in which the nucleic acid molecule is expressed.~~

13. – 17. (Canceled)

18. (Original) A kit comprising a compound which selectively hybridizes to a nucleic acid molecule of claim 1 and instructions for use.

19. – 24. (Canceled)

25. (Previously Presented) A recombinant host cell which expresses the nucleic acid molecule of claim 1.

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26. (Previously Presented) The recombinant host cell of claim 25 which is a mammalian recombinant host cell.

27. (Previously Presented) An isolated nucleic acid molecule, consisting of a nucleic acid sequence selected from the group consisting of:

- a) SEQ ID NO: 1;
- b) SEQ ID NO:3; and
- c) a nucleic acid molecule which encodes a polypeptide having an amino acid sequence consisting of SEQ ID NO:2.

28. (Currently Amended) The isolated nucleic acid molecule of claim 1, wherein the which is selected from the group consisting of:

- a) ~~a nucleic acid molecule comprising the nucleotide sequence which is at least 95% identical to the nucleotide sequence of SEQ ID NO:3, wherein said nucleic acid molecule encodes a polypeptide having at least one activity selected from the group consisting of the ability to glycosylate a target molecule, the ability to bind to a simple sugar and the ability to attach to a membrane; and~~
- b) ~~a nucleic acid molecule which encodes a polypeptide comprising an amino acid sequence with at least 95% 98% identity to the amino acid sequence of SEQ ID NO:2, wherein said polypeptide has a glycosyltransferase activity at least one activity selected from the group consisting of the ability to glycosylate a target molecule, the ability to bind to a simple sugar and the ability to attach to a membrane.~~

29. (Canceled)

30. (Previously Presented) A recombinant host cell which expresses the nucleic acid molecule of claim 27.

31. (New) A recombinant host cell which expresses the nucleic acid molecule of claim 2.

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32. (New) The nucleic acid molecule of claim 2, further comprising vector nucleic acid sequences.

33. (New) The nucleic acid molecule of claim 2, further comprising nucleic acid sequences encoding a heterologous polypeptide.

34. (New) The method of claim 12, wherein the polypeptide comprises SEQ ID NO:2.

35. (New) The method of claim 12, wherein the polypeptide is a fusion protein linked to a non-33945 polypeptide.

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